

SECTION 2.0 TOTAL PHOSPHORUS AS THE KEYSTONE POLLUTANT

Urban stormwater runoff contains a diverse array of pollutants that can have an adverse impact on the Chesapeake Bay, Atlantic Coastal Bays and its environs, which are reviewed in Appendix A. Because of the large number and variability of stormwater pollutants, it is neither feasible nor practical to compute pre-development and post-development loads for each to determine if an overall pollutant reduction of 10% has been achieved at a development site.

To simplify matters, a single urban pollutant was selected as a surrogate for all stormwater pollutants. This "keystone" pollutant is used as the basis for computing pre-development and post-development pollutant loads at a site and ultimately, the necessary pollutant removal requirement. As part of the original guidance, each major stormwater pollutant was evaluated for suitability as a potential keystone pollutant (Appendix B provides a discussion on the selection of the keystone pollutant). Based on this review, total phosphorus was recommended as the keystone pollutant to meet the Critical Area 10% Rule. Total phosphorus was selected as the keystone pollutant because it has the following characteristics:

- The adverse impacts of total phosphorus on the water quality of the Chesapeake and Atlantic Coastal Bays are well documented.
- Total phosphorus exists in both soluble and particulate forms, which means that a variety of removal mechanisms such as settling and biological uptake is needed for effective treatment.
- Abundant data exists to characterize total phosphorus concentrations and pollutant removal performance. This enables reviewers to more accurately compute post development stormwater loads and choose an effective stormwater BMP.

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